

### REMARKS

Claims 12-13 were objected to because of informalities related to the formulas of the claims being slightly modified relative to formula 1 of claims 1, 3, 5-10. Applicant has adopted the Examiner's suggestion of renaming formula 1 to formula 1b in claim 12 and formula 1c in claim 13.

Claims 1-12 and 14-15 were rejected under 35 USC 112, second paragraph, as being indefinite regarding the variable 0-v and 1-v. Applicant has redefined this variable in these claims to be from "0 to v" or "1 to v", as interpreted by the Examiner.

Claim 3 was indefinite also had a problem with Y being characterized as a C<sub>3-4</sub> alkyleneoxy and then having up to 75% by number of ethyleneoxy repeat units. Applicant has clarified the claim such that Y now comprises C<sub>3-4</sub> alkyleneoxy repeat units and has up to 75% by number of ethyleneoxy repeat units. This is consistent with the last half of page 3 of the specification where Y is described as partially comprising C<sub>3-4</sub> alkyleneoxy repeat units and optionally partially comprising up to 75% by number C<sub>2</sub> alkyleneoxy repeat units.

Claim 14 was indefinite as it recites the limitations of formula 1 in line 2, but illustrated only formula 2. Further claim 14 recites "the chain RO-(Y)<sub>x</sub>-T-NH-A-" in line 7 but does not define the variable within the claim. The limitations of claim 14 were inserted into claims 1, 2, 10, and 11. Then claim 14 was canceled.

Claim 15 similarly refers to "formula 1" in line 3 and then provides formula 2a without providing antecedent basis for formula 2a. The limitations of Claim 15 were also inserted into claims 1, 2, 10 and 11 before canceling claim 15. It is noted that the examples of the invention in the specification generally all have multiple RO-(Y)<sub>x</sub>-T-NH-A- groups from the polyamine, so they correspond more to formula 2 or 2a than formula 1. Thus it makes sense to have formulas 2 and 2a throughout the claims rather than as separate independent claims.

In claim 15 there was a problem with q and s being defined as positive, nonzero integers and then q being defined as 2 to 2000 and q + s being from 2-2000. Applicant has redefined a new variable q' as being from 2 to 2000 in formula 2 and leaving q and s in formula 2a as previously defined. This seems to fix the problem. The intent was when q was 1 and s was 0, then formula 1 defined the compound. When q was 2 and s was 0, then formula 2 defined the

compound. When s was 1 or greater, then formula 2a defined the compound and q had to be at least 1 in formula 2a to be the new invention.

Claims 1-4 and 6 were rejected under 35 USC 102(b) as being anticipated by Sung (US 4,689,051). Applicant respectfully disagrees with the Examiner on the teachings of Sung. Applicant believes Sung is narrower than dibasic acid anhydrides and is specifically limited to maleic anhydride and mono or dialkyl substituted maleic anhydride. The Examiner seems to have lifted his language from the summary of invention of Sung (column 1, lines 55-64). Applicant points to column 3, lines 23-41 where dibasic acid anhydrides is defined by Sung. Also the Sung reference in column 4, lines 14-53, explains that the dibasic acid anhydrides' double bond provides the reaction site to add the N-alkyl alkylene diamine to the reaction product. The N-alkyl alkylene diamine is added to the carbon to carbon aliphatic double bond by a mechanism called a Michael's addition reaction. This Michael addition creates a unique C-N bond that is not present in Applicant's reaction product (Applicant's molecule has amide bonds instead). Sung's molecule has an unreacted carboxylic acid group on the reaction product. As can be seen in Applicant's claims, the A group (the dibasic acid or anhydride thereof) specifically is characterized as not having an aliphatic carbon to carbon double bond (as opposed to Sung who needs an aliphatic double bond in that species). In Applicant's molecule one carboxylic acid groups of the dibasic acid is reacted with  $\text{RO-(Y)}_x\text{-T-NH}_2$  and the other carboxylic acid is reacted with Z. Thus in Applicant's reaction product there isn't a residual carboxylic acid group remaining in the reaction product from the dibasic acid.

Claims 14 was rejected in view of Thetford et. al. (US 6,197,877). It is asserted that Thetford et al. doesn't have the  $\text{RO-(Y)}_x\text{-T-NH-A-}$  group(s) required in the amended claims in each of formula 1, 1a, 1b, 1c, 2, and 2a.

Claims 1-9 were rejected under 35 USC 103a as being unpatentable over He (US. 2002/0169251), in view of Erdman (US4,747,971) or Huber et al (US2005/0120911). The Examiner admits that He does not teach the amine containing dispersants derived from polyoxyalkyleneamines such as Jeffamine™. Erdman is alleged to disclose the Jeffamine™ component to the reaction product. The problem with the Examiner's 103 rejection is that the He reference teaches a polymeric amide with free carboxyl functional groups as a dispersant (see the abstract of He (the first three lines) and paragraph [0017] and the structure at the top of page 2 of He). He requires the dispersant be an amic acid. If one looks at the position of the "A" in

formula 1, 1a, 1b, 1c, 2, and 2a molecules it is clear that both carboxylic acid groups are reacted with nitrogen atoms such that there isn't a residual acid group to be part of an amic acid. As He discloses a different type of dispersant than Applicant's claims, it is felt that the combination of He with Erdman or Huber is equally defective to He by itself. Please see paragraph [0035] of He where it is clear that He first condenses the polyester with the polyamine, and thereafter reacts that reaction product with one carboxylic acid group of the cyclic anhydride leaving a free carboxylic acid group.

Claims 1-10 and 12-13 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting over claims 1 and 5-11 of copending application 12/090,505 with an allegation of overlap in scope of the claims.

Claims 1-10 and 12-13 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting over claims 1-9 of copending application 11/718,026 with an allegation of overlap in scope of the claims.

The first two double patent rejections appear to have some basis in fact (noting that none of the claims are currently in allowed form) and Applicant will deal with these two rejections by further arguments or an appropriate terminal disclaimer if and when the 102 and 103 rejections in the current application are overcome.

Claims 14-15 were provisionally rejected on the ground of nonstatutory obviousness-type double patenting over 9 of US Patent No. 6,197,877 with an allegation of overlap in scope of the claims. This provisional rejection in view of US 6,197,877 seems to lack basis in fact. US 6,197,877 only shares the common structure of  $X-^{*}-^{*}-X$  and Q with the current application. Q is defined in US 6,197,877 as  $T-(A)_n(B)_p$  while in the current application Q is defined as  $RO-(Y)_x-T-NH-A-$  where Y is a C2-4alkyleneoxy and A is a dibasic acid or anhydride thereof that doesn't have an aliphatic carbon to carbon double bond. These seem to be very different solubilizing chains hanging from the polyethyleneimine. There is an opportunity for overlap in the  $Q^I$  moieties in the formulas, but the invention of the current application is the  $RO-(Y)_x-T-NH-A-$ , which isn't taught or suggested by US 6,197,877. Therefore Applicant requests that this third provisional obviousness type double patent rejection be withdrawn.

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Allowance of claims 1 to 13 is respectfully requested. If any additional fees are due in connection with the filing of this document, the Commissioner is authorized to charge those fees to our Deposit Account No. 50-1501.

Respectfully submitted,  
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